CLAIMS:

1. Method of manufacturing a device (1) with a magnetic layer-structure, the method comprising the steps of:

- forming the magnetic layer-structure (2),
- heating the magnetic layer-structure with an electric current,

characterized in that the electric current is a pulse (3) having a duration such that no substantial heat transfer from the layer-structure (2) to the environment (4) of the layer-structure takes place, so that the temperature of said environment before and after the current pulse is substantially the same.

2. Method as claimed in claim 1, characterized in that the heat is transferred by means of heat conduction.

3. Method as claimed in claim 1 or 2, characterized in that the electric current pulse (3) is used to select a physical process in the layer-structure, the duration and amplitude of the pulse being adapted to the activation energy of this physical process.

4. Method as claimed in claim 3, characterized in that the selection of the physical process is improved by increasing the amplitude of the pulse and decreasing the pulse duration.

5. Method as claimed in claim 1, characterized in that a sequence of current pulses is applied without substantial heat transfer from the layer-structure to its environment (4).

6. Method as claimed in claim 1 to 5, characterized in that the device (1) is a magnetoresistive device.

7. Method as claimed in claim 6, characterized in that the device (1) is a sensing device.

8. Method as claimed in claims 1 to 7, wherein the magnetic layer-structure (2) comprises at least one bias layer (5), characterized in that a magnetic field is applied during the short pulse, which magnetic field is switched off after the temperature of the bias layer has decreased to below the Néel or Curie temperature.

9. Method as claimed in claim 7, wherein the magnetic layer-structure comprises a first bias layer (5) having a first antiferromagnetic material (6) with a first blocking temperature and a second bias layer (7) having a second different blocking temperature, characterized in that first the magnetization direction (9) of the material having the higher blocking temperature is set and subsequently the magnetization direction (10) is set of the material having the lower blocking temperature.

10. Method as claimed in any of the preceding claims, characterized in that the duration of the electric current pulse (3) is shorter than 100 ms.

11. Method as claimed in claims 8, 9 or 10, wherein the device is used in the manufacture of a magnetic system (11) having several magnetoresistive devices.

12. Method as claimed in claim 11, characterized in that at least four magnetoresistive devices (12,13,14,15) are formed and arranged in a Wheatstone bridge configuration (16).

13. Method as claimed in claims 11 or 12, characterized in that the current pulse is applied for offset compensation by irreversibly changing the resistance of at least one of the bridge devices (12;13;14;15) through local heating.

14. Wheatstone bridge manufactured as claimed in claim 12, characterized in that bridge devices (12,15) having the same magnetization directions in the bias layer are grouped together while bridge devices (13,14) having different magnetization directions are grouped together such that they are spatially separated from the other group.

15. Wheatstone bridge as claimed in claim 14, characterized in that the grouped bridge devices (12,15;13,14) have interleaved meander shapes.